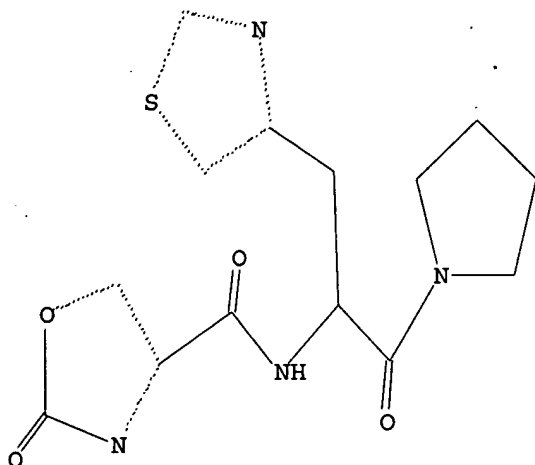


## EAST Search History

| Ref # | Hits  | Search Query    | DBs   | Default Operator | Plurals | Time Stamp          |
|-------|-------|-----------------|---|------------------|---------|---------------------|
| L1    | 1010  | (548/204).CCLS. | US-PGPU<br>B;<br>USPAT;<br>USOCR;<br>EPO;<br>JPO;<br>DERWEN<br>T;<br>IBM_TDB. | OR               | OFF     | 2006/12/10<br>11:41 |
| L2    | 19210 | AMINO ALCOHOL   | US-PGPU<br>B;<br>USPAT;<br>USOCR;<br>EPO;<br>JPO;<br>DERWEN<br>T;<br>IBM_TDB  | ADJ              | ON      | 2006/12/10<br>11:42 |
| L3    | 35    | L1 AND L2       | US-PGPU<br>B;<br>USPAT;<br>USOCR;<br>EPO;<br>JPO;<br>DERWEN<br>T;<br>IBM_TDB  | ADJ              | ON      | 2006/12/10<br>11:42 |
| L4    | 19    | L3 AND PEPTIDE  | US-PGPU<br>B;<br>USPAT;<br>USOCR;<br>EPO;<br>JPO;<br>DERWEN<br>T;<br>IBM_TDB  | ADJ              | ON      | 2006/12/10<br>11:42 |

10/723136

~~10/723136~~



Structure attributes must be viewed using STN Express query preparation.

=> S L1

SAMPLE SEARCH INITIATED 10:31:49 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 3 TO ITERATE

100.0% PROCESSED 3 ITERATIONS 2 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 3 TO 163  
PROJECTED ANSWERS: 2 TO 124

L2 2 SEA SSS SAM L1

=> S L1 FULL

FULL SEARCH INITIATED 10:31:56 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 72 TO ITERATE

100.0% PROCESSED 72 ITERATIONS 41 ANSWERS  
SEARCH TIME: 00.00.01

L3 41 SEA SSS FUL L1

=> FILE CAPLUS

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST  | 166.94           | 167.57        |

FILE 'CAPLUS' ENTERED AT 10:32:02 ON 10 DEC 2006  
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10/229/819

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FILE COVERS 1907 - 10 Dec 2006 VOL 145 ISS 25  
FILE LAST UPDATED: 8 Dec 2006 (20061208/ED)

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=> S L3

L4 6 L3

=> D IBIB ABS HITSTR TOT

L4 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:234805 CAPLUS

DOCUMENT NUMBER: 144:299445

TITLE: A pharmaceutical composition for treating ataxia, multiple system atrophy or balance disorders

INVENTOR(S): Yoshikawa, Takayoshi; Katsuura, Goro

PATENT ASSIGNEE(S): Shionogi & Co., Ltd., Japan

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

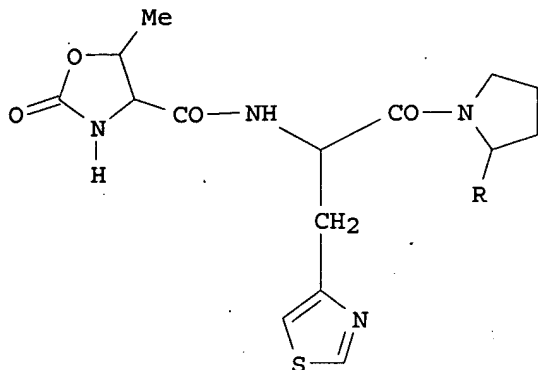
PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 2006028277   | A1   | 20060316 | WO 2005-JP16994 | 20050908 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |      |          |                 |          |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  |      |          |                 |          |

PRIORITY APPLN. INFO.: JP 2004-261977 A 20040909  
US 2004-613717P P 20040929

GI

~~10/22/88~~



I

AB This invention provides a pharmaceutical composition for treating spinocerebellar ataxia (or atrophy, degeneration) or multiple system atrophy, or for improving ataxia or equilibrium disturbance comprising a compound

of the formula I (R = Me, cyano, carbamoyl), a pharmaceutically acceptable salt, or a solvate thereof as an active ingredient. For example, I trihydrate (R = Me) was prepared (yield 80.3%) and its effect on ataxia of Rolling Mouse Nagoya was investigated. An improvement of ataxia of oral I trihydrate (R = Me) at 1 mg/kg and 3 mg/kg was demonstrated, being  $\geq 30$  and  $\geq 100$  times more effective than control compds., resp. A capsule formulation containing compound I 10 mg, lactose 90 mg, corn starch 42 mg, and hydroxypropyl cellulose 3 mg was provided.

IT 204385-91-1 204386-74-3

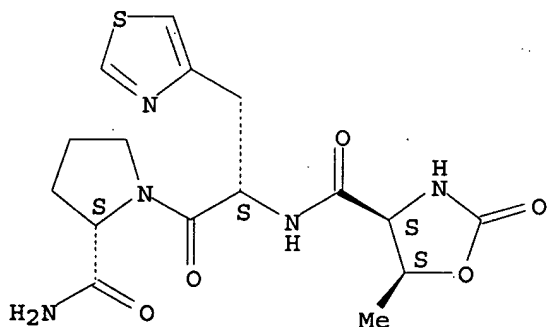
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(composition containing oxooxazolidinylcarbonyl thiazolylalanyl pyrrolidine derivative for treating ataxia, multiple system atrophy or balance disorders)

RN 204385-91-1 CAPLUS

CN L-Prolinamide, (4S,5S)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

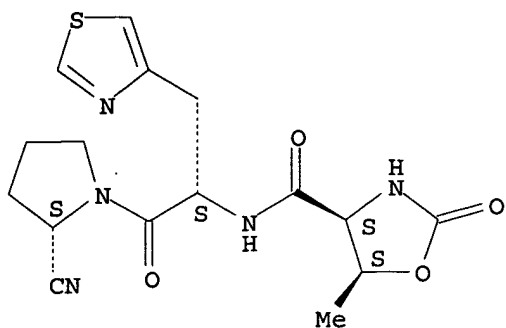


RN 204386-74-3 CAPLUS

CN 4-Oxazolidinecarboxamide, N-[(1S)-2-[(2S)-2-cyano-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-5-methyl-2-oxo-, (4S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

~~10/239,819~~



IT 879122-88-0

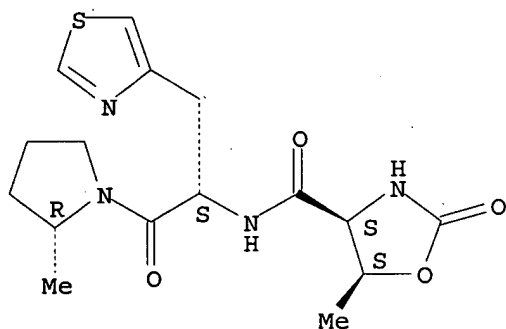
RL: RCT (Reactant); RACT (Reactant or reagent)

(composition containing oxooxazolidinylcarbonyl thiazolylalanyl pyrrolidine derivative for treating ataxia, multiple system atrophy or balance disorders)

RN 879122-88-0 CAPLUS

CN 4-Oxazolidinonecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, monohydrate, (4S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● H<sub>2</sub>O

IT 204386-76-5P 879122-87-9P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

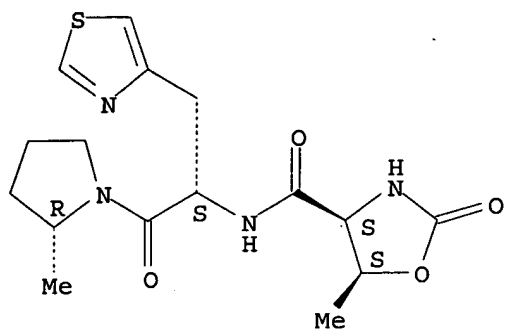
(composition containing oxooxazolidinylcarbonyl thiazolylalanyl pyrrolidine derivative for treating ataxia, multiple system atrophy or balance disorders)

RN 204386-76-5 CAPLUS

CN 4-Oxazolidinonecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, (4S,5S)- (9CI) (CA INDEX NAME)

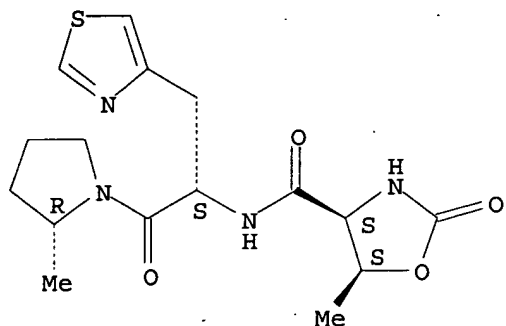
Absolute stereochemistry. Rotation (-).

~~16/229,619~~



RN 879122-87-9 CAPLUS  
CN 4-Oxazolidinonecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, trihydrate, (4S,5S)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 3 H<sub>2</sub>O

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN ,  
ACCESSION NUMBER: 2002:171718 CAPLUS  
DOCUMENT NUMBER: 136:232293  
TITLE: Preparation process of chiral N-(2-(4-thiazolyl)-1-(2-methylpyrrolidinylcarbonyl)ethyl)-4-methyl-2-oxo-oxazolidine-5-carbamide as antiparkinsonian agent  
INVENTOR(S): Shinohara, Shunji; Koike, Katsumi  
PATENT ASSIGNEE(S): Shionogi & Co., Ltd., Japan  
SOURCE: PCT Int. Appl., 52 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|--|------|----------|-----------------|----------|
| WO 2002017954  | A1   | 20020307 | WO 2001-JP7410  | 20010829 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, |      |          |                 |          |

10/229,819

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,  
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT,  
RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,  
UZ, VN, YU, ZA, ZW  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
AU 2001082527 A5 20020313 AU 2001-82527 20010829  
CA 2420537 AA 20030225 CA 2001-2420537 20010829  
EP 1321151 A1 20030625 EP 2001-961157 20010829  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
US 2003191120 A1 20031009 US 2003-362922 20030227  
US 7129256 B2 20061031  
PRIORITY APPLN. INFO.: JP 2000-262618 A 20000831  
WO 2001-JP7410 W 20010829  
OTHER SOURCE(S): CASREACT 136:232293; MARPAT 136:232293  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. [I; A = thiazolyl, imidazolyl; X = single bond, O, S; Y = alkyl, CONR1R2; Z = Q; m = 0, 1, 2, 3, 4; R1, R2 independently = H, alkyl; R3 = H, alkyl; R4 = H, alkyl; R5 = alkyl, H; W = (CH2)n; n = 0, 1, 2, 3] prodrugs, pharmaceutically acceptable salts, solvates, and prodrugs of title compds. are prepared and are found to be useful as therapeutic or preventive agents for Parkinson disease. Thus, the title compound II was prepared from N-tert-butoxycarbonyl-L-(4-thiazolyl)alanine, diphenyldiazomethane, and (4S-cis)-5-methyl-2-oxo-4-oxazolidinecarboxylic acid in five steps.

IT 204386-76-5P

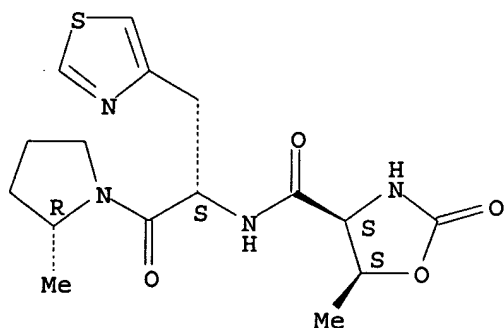
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation process of chiral N-(2-(4-thiazolyl)-1-(2-methylpyrrolidinyl)carbonyl)ethyl)-4-methyl-2-oxo-oxazolidine-5-carbamide as antiparkinsonian agent)

RN 204386-76-5 CAPLUS

CN 4-Oxazolidinecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, (4S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

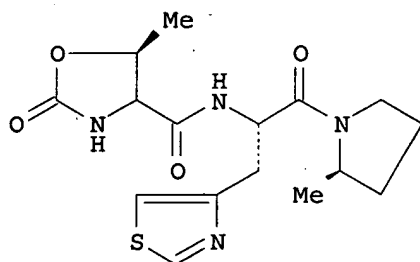


REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS

## RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STM  
 ACCESSION NUMBER: 2002:51292 CAPLUS  
 DOCUMENT NUMBER: 136:123639  
 TITLE: Enteric compositions containing physiologically active peptides  
 INVENTOR(S): Sugita, Katsuji; Yoshikawa, Takayoshi  
 PATENT ASSIGNEE(S): Shionogi & Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 17 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE       |
|---|------|----------|-----------------|------------|
| WO 2002004016   | A1   | 20020117 | WO 2001-JP5543  | 20010628   |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |      |          |                 |            |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  |      |          |                 |            |
| AU 2001066347   | A5   | 20020121 | AU 2001-66347   | 20010628   |
| EP 1300155  | A1   | 20030409 | EP 2001-943852  | 20010628   |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |      |          |                 |            |
| US 2003175350   | A1   | 20030918 | US 2003-332490  | 20030109   |
| PRIORITY APPLN. INFO.:  |      |          |                 |            |
|   |      |          | JP 2000-209923  | A 20000711 |
|   |      |          | WO 2001-JP5543  | W 20010628 |
| OTHER SOURCE(S): MARPAT 136:123639  |      |          |                 |            |
| GI  |      |          |                 |            |



I

AB Disclosed are enteric compns. for oral administration excellent in absorbability, containing TSH-releasing hormone (TRH) or derivs. thereof as the medicinally active ingredient. A coated enteric tablet was prepared from a TRH derivative I 30, corn starch 17.4, hydroxypropyl cellulose SL 0.7, partially alphasized starch 1.4, magnesium stearate 0.5, hydroxypropyl Me cellulose (HPMC2910E) 0.8, hydroxypropyl Me cellulose acetate succinate (HPMCAS-LF) 6, tri-Et citrate 0.7, and talc 1.3 mg.

IT 389119-11-3

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)



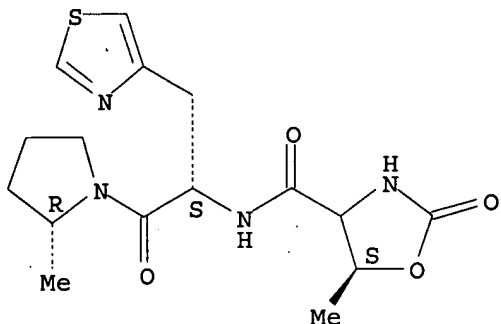
~~10/270-010~~

(enteric compns. containing TRH derivs. and enteric materials)

RN 389119-11-3 CAPLUS

CN 4-Oxazolidinecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:690970 CAPLUS

DOCUMENT NUMBER: 131:314180

TITLE: Oral preparations containing TRH derivatives

INVENTOR(S): Sugita, Katsuji; Satoh, Norihito; Yoshikawa, Takanori

PATENT ASSIGNEE(S): Shionogi & Co., Ltd., Japan

SOURCE: PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|--|------|----------|-----------------|----------|
| WO 9953941   | A1   | 19991028 | WO 1999-JP2006  | 19990415 |
| W: JP, US  |      |          |                 |          |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                 |          |

PRIORITY APPLN. INFO.: JP 1998-104993 A 19980415

AB Preps. for the oral administration of TRH derivs. characterized by containing the TRH derivs., medium-chain triglycerides and, if desired, lecithin. Use of these preps. makes it possible to improve the oral absorbability of the TRH derivs. thereby elevating the bioavailability thereof.

IT 204385-91-1 204386-74-3 204386-76-5

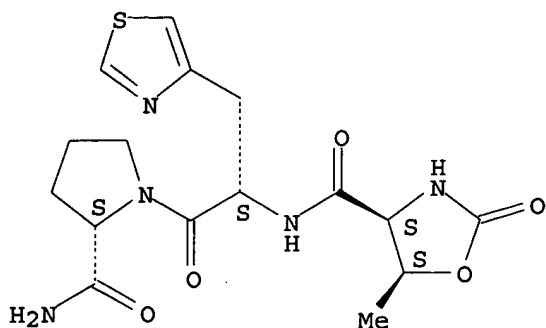
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses) (oral preps. containing TRH derivs.)

RN 204385-91-1 CAPLUS

CN L-Prolinamide, (4S,5S)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

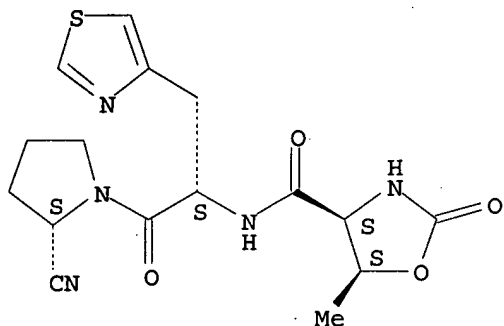
10/229,819



RN 204386-74-3 CAPLUS

CN 4-Oxazolidinecarboxamide, N-[(1S)-2-[(2S)-2-cyano-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-5-methyl-2-oxo-, (4S,5S)- (9CI) (CA INDEX NAME)

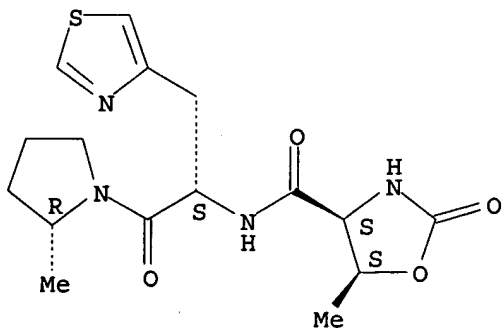
Absolute stereochemistry. Rotation (-).



RN 204386-76-5 CAPLUS

CN 4-Oxazolidinecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, (4S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT:

2

THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:576919 CAPLUS

DOCUMENT NUMBER: 131:200096

TITLE: Process for producing 4-thiazolylmethyl halide,

INVENTOR(S):  $\beta$ -(4-thiazolyl)alanine, and peptide  
 Uenaka, Masaaki; Nagai, Masahiko; Kobayashi, Naotake  
 PATENT ASSIGNEE(S): Shionogi & Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 33 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.                        | DATE       |
|---|------|----------|--|------------|
| WO 9945000  | A1   | 19990910 | WO 1999-JP975                          | 19990301   |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW<br>RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG |      |          |  |            |
| AU 9926423  | A1   | 19990920 | AU 1999-26423                          | 19990301   |
| EP 1069118  | A1   | 20010117 | EP 1999-906538                         | 19990301   |
| EP 1069118  | B1   | 20040922 |  |            |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI   |      |          |  |            |
| TW 530052   | B    | 20030501 | TW 1999-88103061                       | 19990301   |
| AT 277024   | E    | 20041015 | AT 1999-906538                         | 19990301   |
| ES 2229680  | T3   | 20050416 | ES 1999-906538                         | 19990301   |
| JP 3811885  | B2   | 20060823 | JP 2000-534543                         | 19990301   |
| US 6506903  | B1   | 20030114 | US 2000-622441                         | 20000817   |
| PRIORITY APPLN. INFO.:  |      |          | JP 1998-49259                          | A 19980302 |
|   |      |          | WO 1999-JP975                          | W 19990301 |
| OTHER SOURCE(S):  |      |          | CASREACT 131:200096; MARPAT 131:200096 |            |
| GI  |      |          |  |            |

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The process for producing a compound represented by general formula (I) (wherein R1 is hydrogen or halogeno and X is halogeno) comprises reacting 4-methylthiazole with an N-halosuccinimide in a solvent in the presence of a radical initiator. A process for producing a 4-thiazolylalanine derivative (II and III; R2' is an amino acid-protecting group) comprises coupling of 4-thiazolylmethyl halide (I) with aminomalonate of formula R2NHCH(CO2R3)2 (R2 is an amino acid protective-group; R3 is lower alkyl) to give amino(4-thiazolylmethyl)malonate [I; X = C(CO2R3)2NHR2], followed by hydrolysis, decarboxylation, and optical resolution. Moreover, the 4-thiazolylalanine derivative undergoes peptide bond formation to give dipeptide amides [IV; Y is (un)substituted alkyl]. Thus, 163.5 g 4-methylthiazole was dissolved in 3 L chlorobenzene, heated to 130°, treated with 242 g N-chlorosuccinimide and 13.5 g 2,2'-azobisbutyronitrile, and kept at 160° for 15 min to give, after workup and treatment with 4 N HCl/EtOAc, 43.5% 4-chloromethylthiazole hydrochloride (V.HCl). V.HCl (154 g) was dissolved in 0.5 L H2O and treated with 3 L toluene and 113 g NaHCO3, followed by washing the organic layer and extracting the aqueous layer, drying the combined organic layer over MgSO4, and distilling off the solvent, to give 98% V. To 20% NaOMe/MeOH (306 g) was added 96 g di-Et acetamidomalonate, refluxed for 2

h, treated with a solution of 124 g V containing 10% PhMe in ethanol (0.6 L) at 50°, and stirred at 50° for 3 h to give 72.5% I [X = C(CO<sub>2</sub>Et)<sub>2</sub>NHAc]. The latter diester (201.2 g) was dissolved in 3 N aqueous NaOH (960 mL), stirred at 50° for 1.5 h, treated with 100 ML concentrated HCl to adjust pH = 3.5, stirred at 100° for 3 h, cooled, treated with 120 g immobilized acylase, followed by adjusting pH = 6.7, stirred at 37° for 4 h, and filtered. To the filtrate were added 500 mL dioxane, 90.8 g di-tert-Bu dicarbonate, and 58 mL Et<sub>3</sub>N, stirred at 25° for 2 h, and extracted with 1 L EtOAc to give 40% III (R<sub>2</sub>' = Boc). The latter N-tert-butoxycarbonyl-(4-thiazolyl)alanine was converted into a dipeptide (VI) in 4 steps.

IT 204386-76-5P

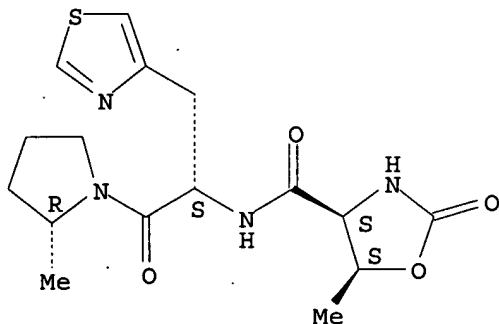
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of thiazolylmethyl halide by halogenation of methylthiazole, its coupling with aminomalonate to amino(thiazolylmethyl)malonate, and conversion to β-(4-thiazolyl)alanine and peptide)

RN 204386-76-5 CAPLUS

CN 4-Oxazolidinecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, (4S,5S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT:

6

THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:163612 CAPLUS

DOCUMENT NUMBER: 128:230695

TITLE: Preparation of novel peptide derivatives having thiazolyl-alanine residue

INVENTOR(S): Sugawara, Tamio; Yoshikawa, Takayoshi; Tada, Yukio

PATENT ASSIGNEE(S): Shionogi &amp; Co., Ltd., Japan

SOURCE: PCT Int. Appl., 139 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|--|------|----------|-----------------|----------|
| WO 9808867   | A1   | 19980305 | WO 1997-JP2917  | 19970822 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, |      |          |                 |          |

VN, YU, ZW  
 RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,  
 GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,  
 GN, ML, MR, NE, SN, TD, TG

|  |                   |          |                  |            |
|--|-------------------|----------|------------------|------------|
| CA 2264268   | AA                | 19980305 | CA 1997-2264268  | 19970822   |
| CA 2264268   | C                 | 20031111 |                  |            |
| AU 9738680   | A1                | 19980319 | AU 1997-38680    | 19970822   |
| AU 713133  | B2                | 19991125 |                  |            |
| EP 933379  | A1                | 19990804 | EP 1997-935856   | 19970822   |
| EP 933379  | B1                | 20060322 |                  |            |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,<br>IE, SI, LT, LV, FI, RO |                   |          |                  |            |
| BR 9712081   | A                 | 19990824 | BR 1997-12081    | 19970822   |
| CN 1235610   | A                 | 19991117 | CN 1997-199248   | 19970822   |
| JP 3234236   | B2                | 20011204 | JP 1998-511459   | 19970822   |
| AT 321067  | E                 | 20060415 | AT 1997-935856   | 19970822   |
| PT 933379  | T                 | 20060731 | PT 1997-935856   | 19970822   |
| ES 2259805   | T3                | 20061016 | ES 1997-935856   | 19970822   |
| TW 492977  | B                 | 20020701 | TW 1997-86112314 | 19970827   |
| MX 9901831   | A                 | 20000331 | MX 1999-1831     | 19990224   |
| KR 2000035930  | A                 | 20000626 | KR 1999-701667   | 19990227   |
| US 6319902   | B1                | 20011120 | US 1999-230821   | 19990512   |
| PRIORITY APPLN. INFO.:   |                   |          | JP 1996-226386   | A 19960828 |
|  |                   |          | JP 1997-90529    | A 19970409 |
|  |                   |          | WO 1997-JP2917   | W 19970822 |
| OTHER SOURCE(S):   | MARPAT 128:230695 |          |                  |            |
| GI   |                   |          |                  |            |

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Peptide derivs. represented by general formula [I; A = 4- or 5-thiazolyl; Y = single bond, O, S; m = 0-4; Y = (un)substituted alkyl or CO<sub>2</sub>H, cyano, CONR<sub>1</sub>R<sub>2</sub>; wherein R<sub>1</sub>, R<sub>2</sub> = H or (un)substituted alkyl or NR<sub>1</sub>R<sub>2</sub> = (un)substituted nonarom. heterocyclyl optionally containing O, N, or S; Z = Q, Q1; R<sub>3</sub> = H, (un)substituted alkyl, CO<sub>2</sub>H, or acyl; R<sub>4</sub>, R<sub>5</sub> = H, (un)substituted alkyl; W = (CH<sub>2</sub>)<sub>n</sub>, O, S, (un)substituted NH; wherein n = 0, 1, 2, or 3] or pharmacol. acceptable salts or hydrates thereof are prepared These peptide compds. have improved central nerve activating effects such as sustained acetylcholine-releasing effect, antireserpine effect and spontaneous motility increasing effect as compared with the publicly known TSH releasing hormone TSH-releasing hormone (TRH) (H-pGlu-His-Pro-NH<sub>2</sub>) and TRH derivs. Thus, L-pyroglutamic acid was condensed with 3-(4-thiazolyl)-L-alanyl-L-prolinamide hydrochloride using DCC and N-hydroxysuccinimide in DMF to give the title compound (II; R = Q<sub>2</sub>). II (R = Q<sub>3</sub>) at 24 μmol/kg p.o. increased ≤260% release of acetylcholine from brain in rat 350 h after administration of the compound

IT 204385-84-2P 204385-91-1P 204385-98-8P  
 204386-01-6P 204386-03-8P 204386-25-4P  
 204386-28-7P 204386-30-1P 204386-35-6P  
 204386-37-8P 204386-39-0P 204386-41-4P  
 204386-45-8P 204386-47-0P 204386-50-5P  
 204386-52-7P 204386-54-9P 204386-58-3P  
 204386-60-7P 204386-61-8P 204386-62-9P  
 204386-63-0P 204386-64-1P 204386-66-3P  
 204386-67-4P 204386-68-5P 204386-70-9P  
 204386-71-0P 204386-72-1P 204386-73-2P  
 204386-74-3P 204386-75-4P 204386-76-5P  
 204386-77-6P 204506-84-3P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological

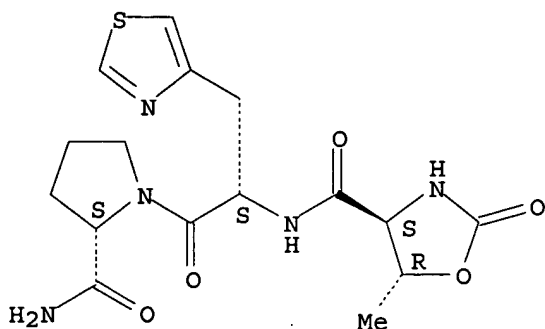
10/229,819

study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);  
BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of novel peptide derivs. having thiazolylalanine residue as  
central nerve activators)

RN 204385-84-2 CAPLUS

CN L-Prolinamide, (4S,5R)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(4-  
thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

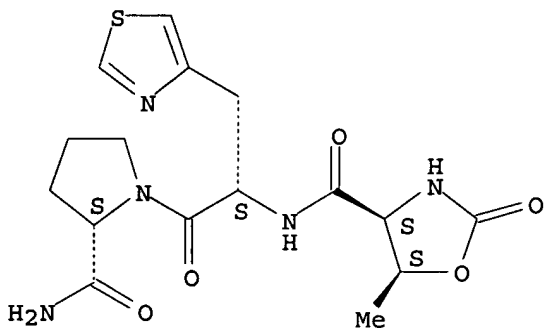
Absolute stereochemistry. Rotation (-).



RN 204385-91-1 CAPLUS

CN L-Prolinamide, (4S,5S)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(4-  
thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

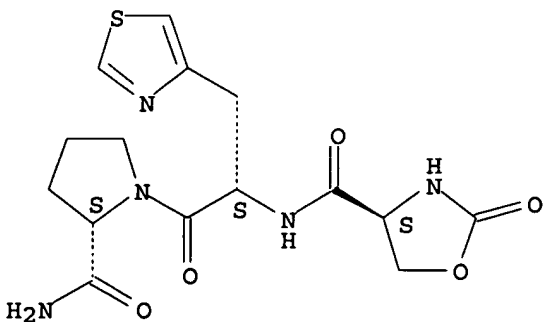
Absolute stereochemistry. Rotation (-).



RN 204385-98-8 CAPLUS

CN L-Prolinamide, (4S)-2-oxo-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

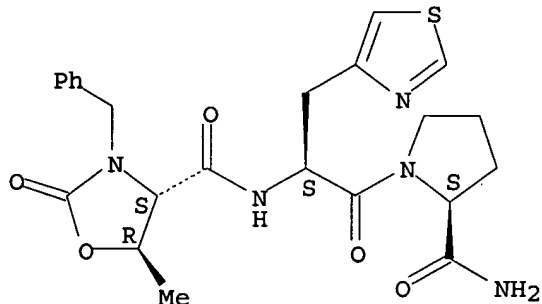


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RN 204386-01-6 CAPLUS

CN L-Prolinamide, (4S,5R)-5-methyl-2-oxo-3-(phenylmethyl)-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

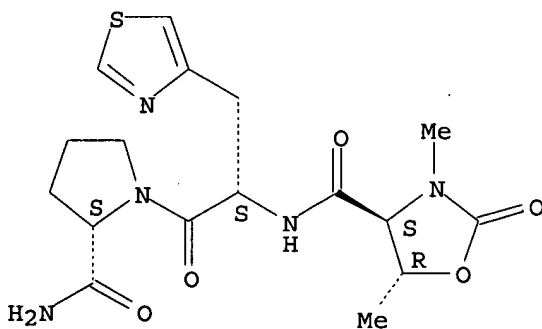
Absolute stereochemistry. Rotation (-).



RN 204386-03-8 CAPLUS

CN L-Prolinamide, (4S,5R)-3,5-dimethyl-2-oxo-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

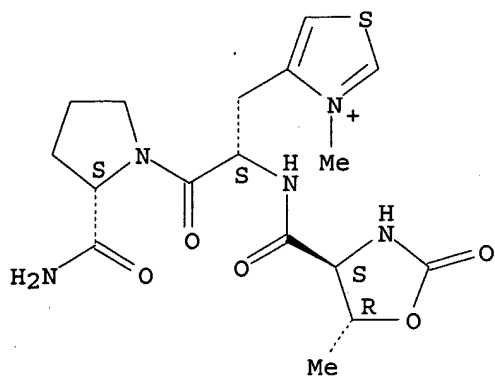


RN 204386-25-4 CAPLUS

CN L-Prolinamide, (4S,5R)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(3-methylthiazolium-4-yl)-L-alanyl-, iodide (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

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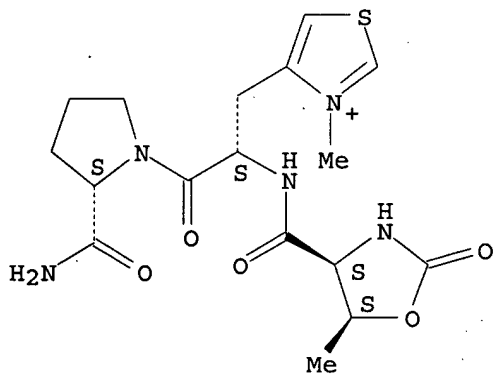


● I<sup>-</sup>

RN 204386-28-7 CAPLUS

CN L-Prolinamide, (4S,5S)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(3-methylthiazolium-4-yl)-L-alanyl-, iodide (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



● I<sup>-</sup>

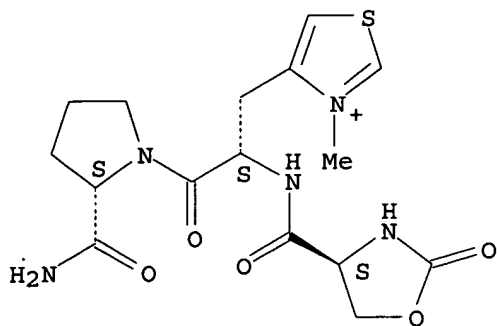
RN 204386-30-1 CAPLUS

CN L-Prolinamide, (4S)-2-oxo-4-oxazolidinecarbonyl-3-(3-methylthiazolium-4-yl)-L-alanyl-, iodide (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



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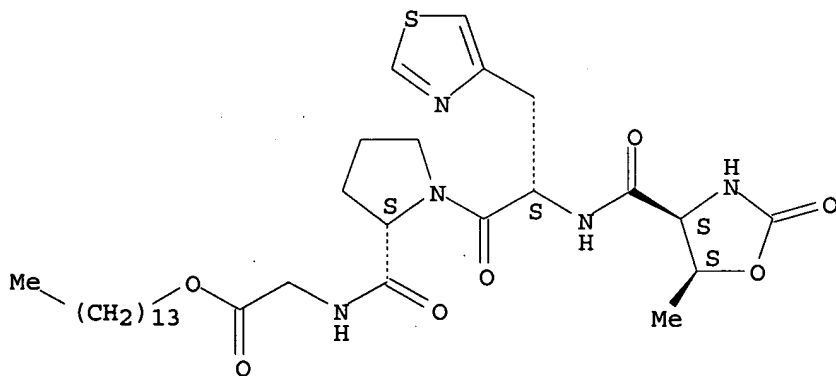


● I<sup>-</sup>

RN 204386-35-6 CAPLUS

CN Glycine, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-L-prolyl-, tetradecyl ester (9CI) (CA INDEX NAME)

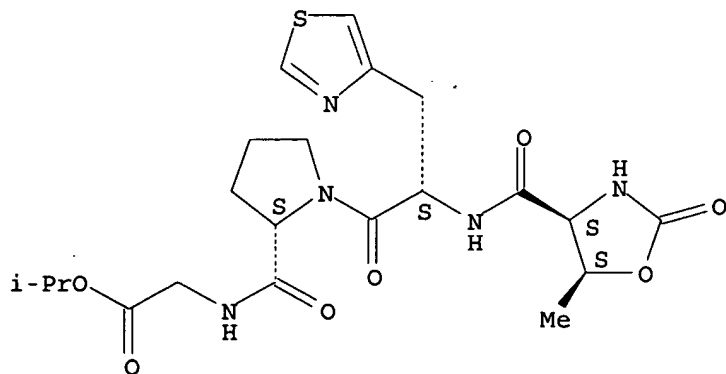
Absolute stereochemistry. Rotation (-).



RN 204386-37-8 CAPLUS

CN Glycine, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-L-prolyl-, 1-methylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



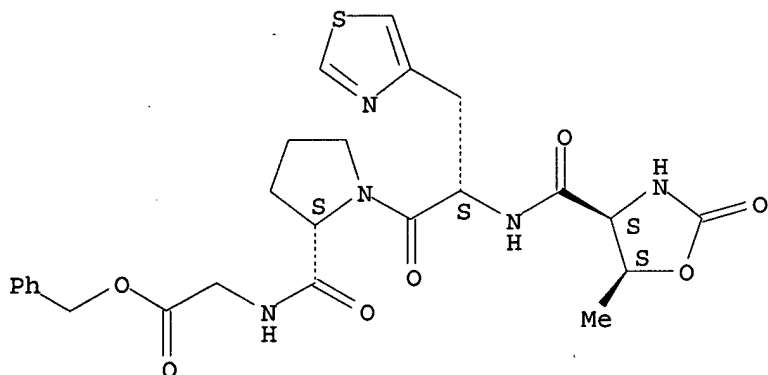
RN 204386-39-0 CAPLUS

CN Glycine, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-

10/229,819

alanyl-L-prolyl-, phenylmethyl ester (9CI) (CA INDEX NAME)

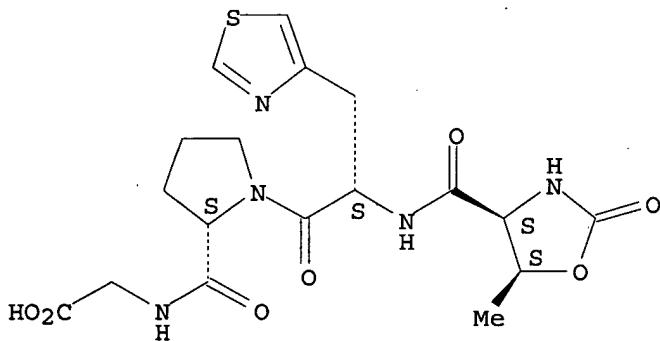
Absolute stereochemistry. Rotation (-).



RN 204386-41-4 CAPLUS

CN Glycine, (4S,5S)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl-L-prolyl- (9CI) (CA INDEX NAME)

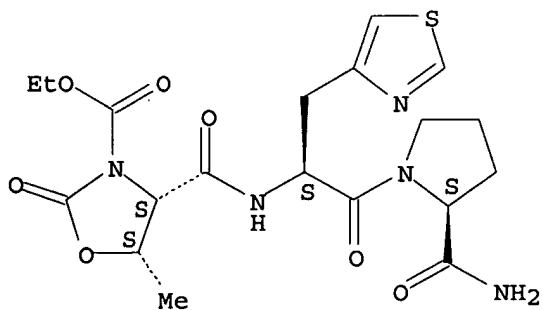
Absolute stereochemistry. Rotation (-).



RN 204386-45-8 CAPLUS

CN L-Prolinamide, (4S,5S)-3-(ethoxycarbonyl)-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 204386-47-0 CAPLUS

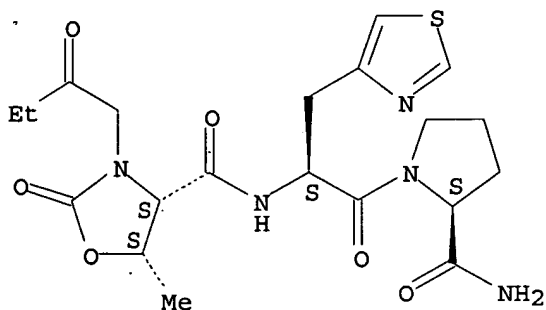
CN L-Prolinamide, (4S,5S)-3-[(2,2-dimethyl-1-oxopropoxy)methyl]-5-methyl-2-oxo-4-oxazolidinecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)



10/229,819

3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

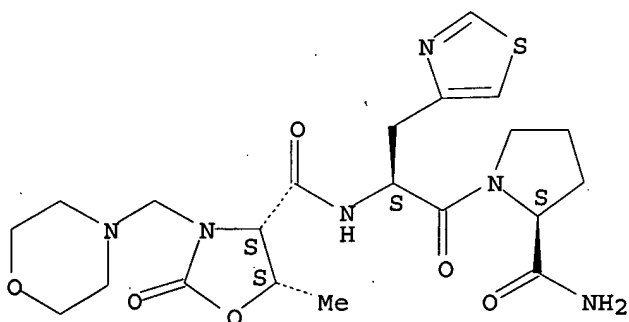
Absolute stereochemistry. Rotation (-).



RN 204386-58-3 CAPLUS

CN L-Proteinase K inhibitor, (4S,5S)-5-methyl-3-(4-morpholinylmethyl)-2-oxo-4-oxazolidinone-4-carbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

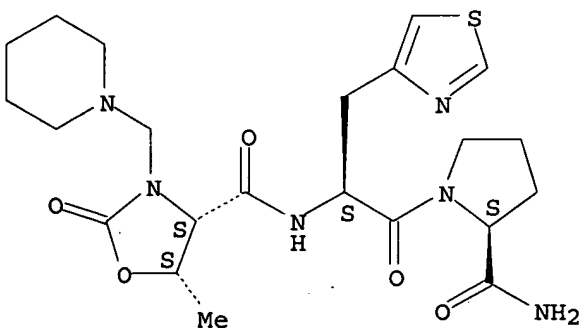
Absolute stereochemistry. Rotation (-).



RN 204386-60-7 CAPLUS

CN L-Proteinase K inhibitor, (4S,5S)-5-methyl-2-oxo-3-(1-piperidinylmethyl)-4-oxazolidinone-4-carbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

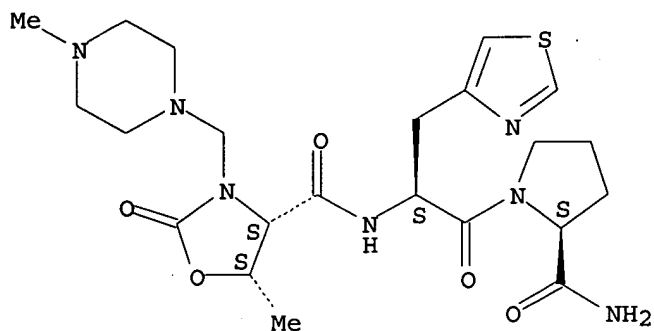


RN 204386-61-8 CAPLUS

CN L-Proteinase K inhibitor, (4S,5S)-5-methyl-3-[(4-methyl-1-piperazinyl)methyl]-2-oxo-4-oxazolidinone-4-carbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

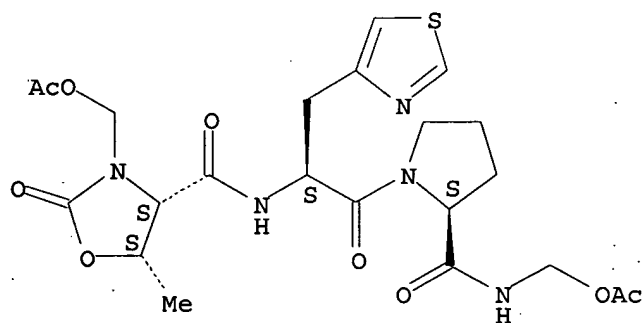
10/229,819



RN 204386-62-9 CAPLUS

CN L-Prolinamide, (4S,5S)-3-[(acetyloxy)methyl]-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-N-[(acetyloxy)methyl]- (9CI) (CA INDEX NAME)

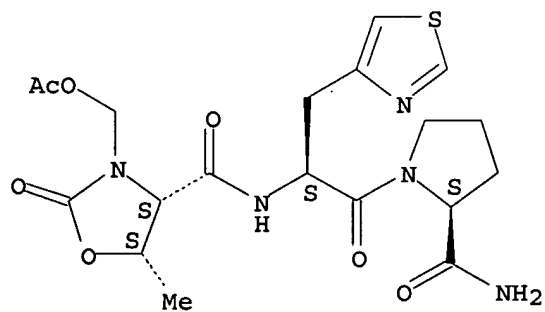
Absolute stereochemistry.



RN 204386-63-0 CAPLUS

CN L-Prolinamide, (4S,5S)-3-[(acetyloxy)methyl]-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

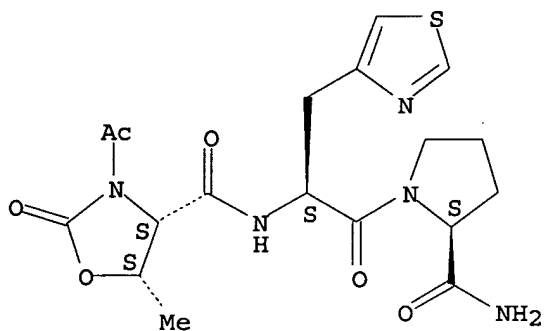


RN 204386-64-1 CAPLUS

CN L-Prolinamide, (4S,5S)-3-acetyl-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

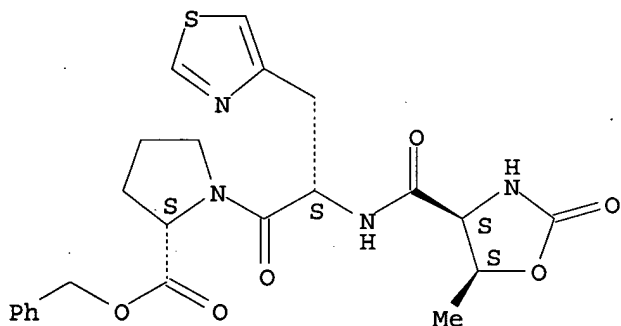
10/229,819



RN 204386-66-3 CAPLUS

CN L-Proline, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-, phenylmethyl ester (9CI) (CA INDEX NAME)

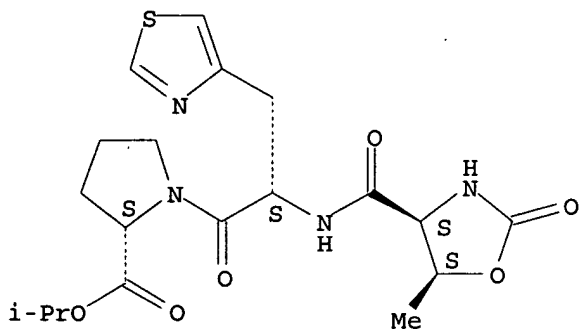
Absolute stereochemistry. Rotation (-).



RN 204386-67-4 CAPLUS

CN L-Proline, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-, 1-methylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

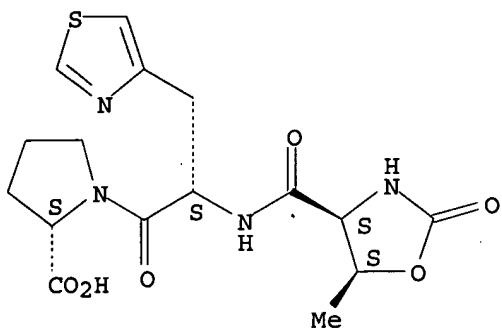


RN 204386-68-5 CAPLUS

CN L-Proline, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

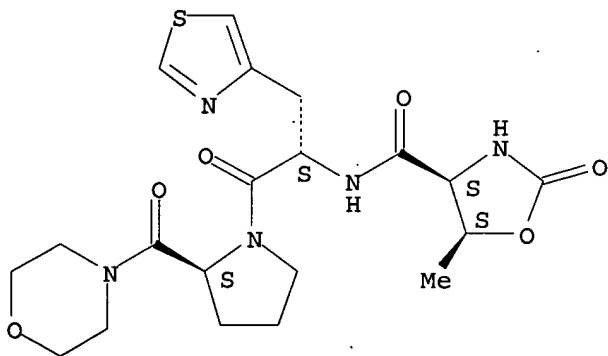
10/229,819



RN 204386-70-9 CAPLUS

CN 4-Oxazolidinonecarboxamide, 5-methyl-N-[2-[2-(4-morpholinylcarbonyl)-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, [4S-[4α[R\*(R\*)],5α]]- (9CI) (CA INDEX NAME)

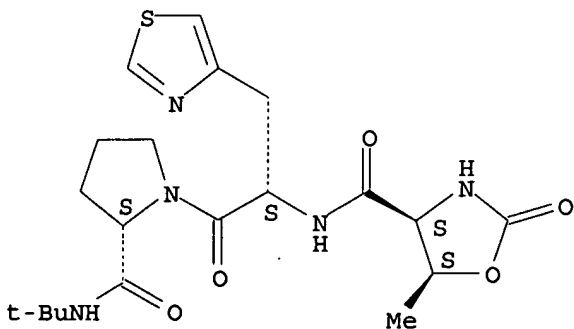
Absolute stereochemistry. Rotation (-).



RN 204386-71-0 CAPLUS

CN L-Prolinamide, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-N-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

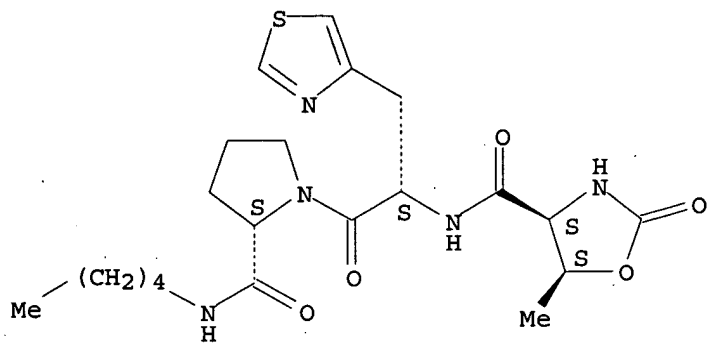


RN 204386-72-1 CAPLUS

CN L-Prolinamide, (4S,5S)-5-methyl-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-N-pentyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

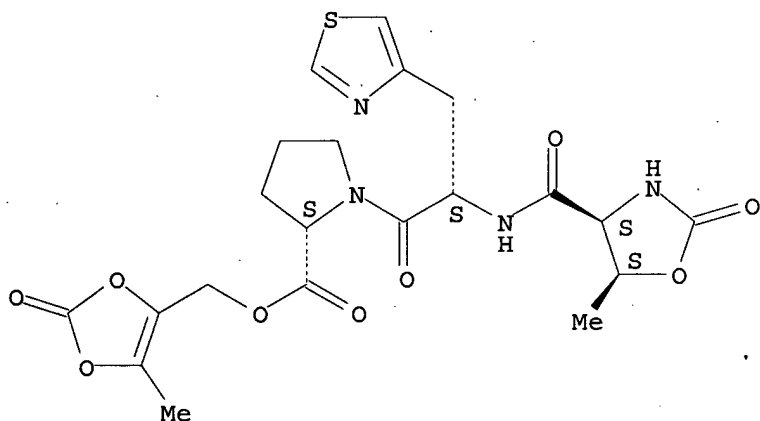
10/229,819



RN 204386-73-2 CAPLUS

CN L-Proline, (4S,5S)-5-methyl-2-oxo-4-oxazolidinone-3-(4-thiazolyl)-L-alanyl-, (5-methyl-2-oxo-1,3-dioxol-4-yl)methyl ester (9CI) (CA INDEX NAME)

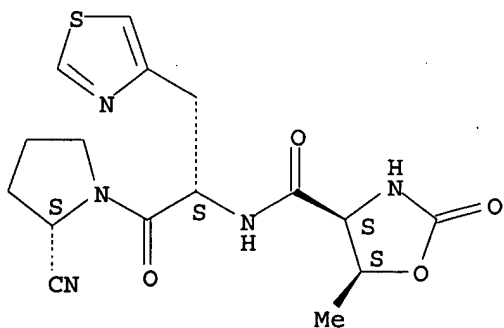
Absolute stereochemistry. Rotation (-).



RN 204386-74-3 CAPLUS

CN 4-Oxazolidinonecarboxamide, N-[(1S)-2-[(2S)-2-cyano-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-5-methyl-2-oxo-, (4S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



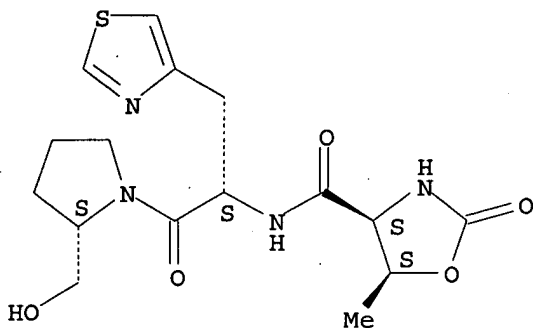
RN 204386-75-4 CAPLUS

CN 4-Oxazolidinonecarboxamide, N-[2-[2-(hydroxymethyl)-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-5-methyl-2-oxo-, [4S-[4α[R\*(R\*)],5α]]- (9CI) (CA INDEX NAME)



10/229,819

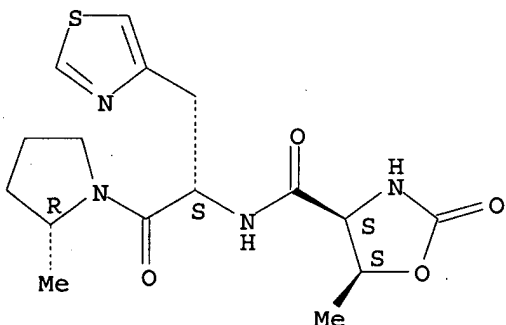
Absolute stereochemistry. Rotation (-).



RN 204386-76-5 CAPLUS

CN 4-Oxazolidinonecarboxamide, 5-methyl-N-[(1S)-2-[(2R)-2-methyl-1-pyrrolidinyl]-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, (4S,5S)- (9CI)  
(CA INDEX NAME)

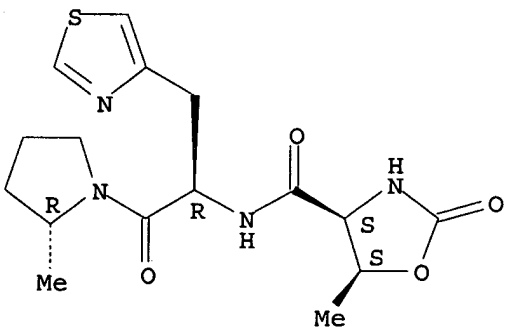
Absolute stereochemistry. Rotation (-).



RN 204386-77-6 CAPLUS

CN 4-Oxazolidinonecarboxamide, 5-methyl-N-[2-(2-methyl-1-pyrrolidinyl)-2-oxo-1-(4-thiazolylmethyl)ethyl]-2-oxo-, [4S-[4α[S\*(S\*)],5α]]- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



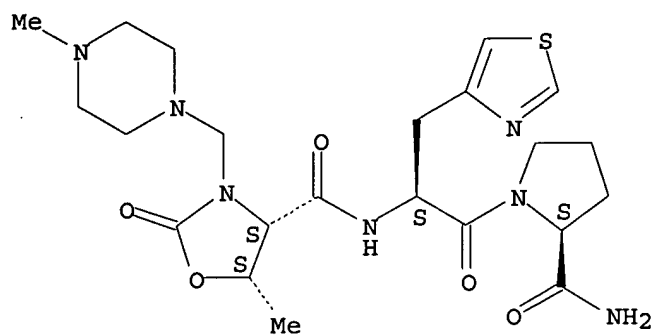
RN 204506-84-3 CAPLUS

CN L-Prolineamide, (4S,5S)-5-methyl-3-[(4-methyl-1-piperazinyl)methyl]-2-oxo-4-oxazolidinonecarbonyl-3-(4-thiazolyl)-L-alanyl-, hydrochloride (5:9) (9CI)

10/229,819

(CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



● 9/5 HCl

REFERENCE COUNT:

14

THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT